SOUTH CAROLINA WATER QUALITY ASSOCIATION

COMMENTS ON PROPOSED

TRIENNIAL REVIEW OF WATER QUALITY STANDARDS

November 26, 2007

The South Carolina Water Quality Association represents owners and operators of publicly-owned treatment works statewide. We are pleased to offer the following comments for consideration as the Department proceeds with its triennial review of water quality standards. Our comments comprise four priority issues and then a group of secondary issues.

I. Priority Issues

We have four priority issues for the Department's consideration.

The first two address the statewide fresh water and marine criteria for bacteria. The third issue is our support for the availability of the biotic ligand transport model (BLTM) to dischargers to freshwater statewide. The final issue addresses the application of the 0.1 Rule.

A. Revise the Implementation of the Enterococcus Standard for Coastal Water Dischargers

DHEC has adopted US EPA's 1986 criteria for coastal waters. However, the standard includes implementation language that requires a monthly geometric mean as well as a daily maximum permit limit for everyone in every circumstance. The daily maximum requirement is out-of-step with EPA's implementation guidance and the practice of almost every other state.

While DHEC has proposed to allow up to 10% of the monthly samples to exceed the daily maximum value, this approach is not principled in light of how the entero standard was developed and is not acceptable to the WQA members. This approach attaches significance to the arbitrary daily values which they do not warrant. This approach also imposes a far greater level of stringency than intended by the geometric mean/EPA without any justification. Moreover, this approach provides absolutely no relief to smaller dischargers who do not sample at least 10 times per month. This is just plain unfair.

We urge the Department to change the standard to be consistent with EPA's guidance on how to implement this criterion. We provide several options below consistent with EPA's guidance and the practices of the other States.

EPA's recent implementation guidance explains that the intended level of protection is that conveyed by the monthly geometric mean. The single sample maximum (upper

percentile value) was never intended to provide an additional level of protection. EPA's guidance provides an example that imposing the 104 mpn entero value as a single sample maximum will effectively reduce the monthly geometric mean from 35 to 2. Put another way, according to EPA's guidance, a discharger would have to meet a monthly geometric mean of 2 in order to ensure no single sample is greater than 104. This is a significantly more stringent standard than EPA's standard was intended and will impose 17.5 times more protection (greater stringency) than the level provided by the geometric mean, upon which the scientific studies are based. In addition to no basis for this additional stringency, the reality is that dischargers simply cannot consistently comply with this unnecessarily heightened stringency on a daily basis.

EPA reminds states in its guidance that they can use only the geometric mean for both permitting and water quality assessment purposes. That is exactly what the Department should do. Accordingly, we urge the Department to clarify in the standards regulation that only the geometric mean will be used for NPDES permitting and water quality assessment purposes while the geometric mean and upper percentile values will be used in the context of bathing beaches to inform beach management decisions.

We note that if the Department does intend to impose a daily maximum limit to implement the geometric mean, EPA is explicit that such limits should be based upon an individual assessment of the monthly geometric mean and discharger effluent variability for entero. DHEC has suggested that a weekly or daily limit so calculated would be more stringent. We would like you to share with us the examples (no names) so we can see how DHEC calculated a weekly/daily limit in accordance with EPA's instructions.

The SC WQA would not be opposed to DHEC implementing the upper percentile values currently in the standards as a weekly geometric mean requirement for entero in POTW permits and continue the daily maximum approach for non-POTWs. Alternatively, dischargers that collect five samples in a month would comply with the geometric mean and those collecting fewer than five would have to meet a properly calculated daily maximum value.

This is a very important issue. We have attached a copy of EPA's guidance as well as an internet citation for a recent public notice from the State of Indiana regarding e.coli (same application principle as for entero). In that notice, Indiana proposes to move away using the daily maximum approach based upon the following findings:

- "For a variety of reasons, many NPDES permits are appealed due to the expected inability to meet the single sample maximum limits for e.coli."
- "Due to the nature and limitations of bacterial sampling and analysis, it is not possible for operators of wastewater treatment facilities to ensure compliance with a single sample maximum at all times."

- "[T]he testing methods may produce falsely high values that could place facilities in noncompliance even when the wastewater treatment plant is being operated properly."
- "[M]ost states determine a wastewater facility's NPDES permit compliance based upon the geometric mean of a minimum number of effluent samples, 7-day averages of samples or by excluding a percent of the data due to testing method variability. Each of these approaches allows wastewater treatment operators to function within acceptable and protective permit parameters without being subject to noncompliance due to the variability inherent in E. coli testing results."
- "Specifically, the rulemaking will address compliance with the E. coli limits from wastewater effluent. Sample variability as well as the lack of precision of the current test method can make meeting the [daily maximum] limit difficult."

http://www.in.gov/legislative/register/20061220-IR-327060573FNA.xml.pdf at 1-2.

The Department has acknowledged that the federal rules for POTWs are monthly/weekly unless impracticable. EPA has allowed almost every other state to impose a geometric mean for NPDES implementation purposes for the entero/ecoli WQS. This is because the way the entero and e.coli standards were developed – using a geometric mean is inconsistent with a single sample number (see attached technical memo from Dale Phillips).

Accordingly, we urge the Department to revise the implementation language for enterococcus as to POTWs to specify either:

(1) Only the geometric mean will apply for NPDES purposes where a discharger collects five samples in a month (the single sample/daily maximum will apply where fewer than five samples are collected) or
(2) The monthly geometric mean will apply as well as a weekly geometric mean set at the single sample maximum value established in the standards. Where fewer than five samples are collected in any month, the single sample value will apply as a daily maximum limit.

Both options are clearly consistent with EPA's standards because as long as the monthly geometric mean is met, there is no need for any other limit. Thus, option 2 provides an additional level of protection through the weekly geometric mean.

Finally, we note that EPA is routinely approving changes to State water quality standards to become consistent with its implementation guidance. For example, last year EPA approved the District of Columbia's water quality standards – which were revised to specify that the monthly geometric mean only applies for NPDES and 303(d) purposes. See http://www.epa.gov/waterscience/standards/wqslibrary/dc/dc_3_register.pdf

B. Fecal Coliform – Clarify the Rules so that a Monthly Geometric Mean 0f 200 Applies Along with A Daily Maximum of 400 That Can be Exceeded no More than 10 Percent of the Time – Otherwise Adopt E.Coli.

The Department should revise 61-68(G)(9)(f) to remove the provision calling for five consecutive fecal samples in a 30-day period. The five consecutive sample language is a clerical error in that EPA's fecal standard calls for five samples over a 30-day period. We note the shellfish fecal standard was properly written and does not specify a consecutive sample requirement (and expressly includes a "minimum of four samples" for the entero requirement), the recreation entero standard calls for four samples over a 30-day period. A five consecutive sample requirement makes no sense in relation to a 30-day standard as we end up converting the 30-day standard to a five-day standard if we sample five consecutive days. The five-day standard is much more stringent than a 30-day standard.

DHEC has never implemented the five consecutive sample requirement in permits and, accordingly, this clerical error should be changed to avoid confusion. We note that the implementation language for fecal calls for using 200 as a monthly average requirement and not a five consecutive sample requirement. Accordingly, there is no impact to water quality from this change. The standard contains a clerical error that should be fixed.

Finally, it is illogical to impose a more stringent limit (200 over five consecutive days) when a discharger samples more frequently rather than when less frequent sampling is done. In order to implement the 30-day standard, the sampling requirement should be a minimum of five samples during the 30-day period.

Regarding the shellfish standards, we believe the Department should clarify Section E.14(c)(8) to expressly add that no more than ten percent of the monthly samples can exceed 43 mpn. This will make the implementation provision consistent with the Standard in this regulation, but it will also make it consistent with the shellfish regulations found at R. 61-47 ("For waters sampled under adverse pollution conditions, the median fecal coliform Most Probable Number (MPN) or the geometric mean MPN shall not exceed fourteen per one hundred milliliters, and not more than ten percent of the samples shall exceed a fecal coliform MPN of forty-three per one hundred milliliters (per five tube decimal dilution). 61-47.B.3").

We note the Department's response to comments states that "The Department interprets this section to allow "no more than 10% of the monthly samples to exceed 43 mpn, subject to antibacksliding and antidegradation review."

We don't understand why the Department would not make this clarifying change. However, we will accept the Department's interpretation provided the Department has coordinated with its permit writers so that we will not get an inconsistent interpretation from them.

If the Department is not willing to make the above changes to the fecal coliform criteria, we believe it should move away from fecal altogether and adopt EPA's 1986 e.coli criteria. While we recognize the Department may be interested in assessing e.coli data in comparison to fecal, we note that the e.coli criteria have been around for 20 years. During that period numerous other states have moved to e.coli without any programmatic disruptions. Moreover, DHEC moved to entero fairly quickly, again without any major disruptions. Thus, if DHEC won't make the fecal coliform criteria more reasonable, we urge the Department to move to e.coli with a two-year implementation period where side-by-side fecal/e.coli testing will be conducted. This two-year period should be more than adequate to collect any information which DHEC may legitimately need in terms of a comparison.

We see no reason for DHEC to stay with a 1956 fecal standard that EPA has shown has an inverse relationship with swimmer illness (the higher the fecal levels, the lower the swimmer illness) when e.coli has been shown to positively correlated to swimmer illness.

Thus, there is no public health-based reason to stay with fecal coliform – the standard simply misses the mark (badly in fact).

Accordingly, we urge DHEC to replace the 1956 fecal coliform recreational bacteria criteria with EPA's 1986 e.coli criteria. As noted above for entero, in doing so, we urge the Department to implement the e.coli criteria as a monthly geometric mean for NPDES purposes. Thus, where a discharger collects five samples in a month they would comply with the geometric mean and those with fewer than five would meet the single sample value. Alternatively, we could support a monthly and weekly geometric mean requirement where the weekly geometric mean is set at the level of the single sample maximum number. As noted above, as long as the monthly geometric mean is met, the weekly limit is unnecessary and simply would provide an additional level of protection.

C. **BLM Model for Freshwater Copper.**

The WQA supports the Department's proposed inclusion of a footnote to clarify that the BLM model may be used – at the discharger's election – for determining freshwater copper effluent limits.

D. Clarify the Application of the 0.1 Rule

We think the Department should make clear that the 0.1 rule only applies when a stream actually experiences low DO. Where there are adequate data to delineate the period of naturally low DO levels, the Department should use those data to establish the chronological boundaries in which the rule will apply.

Where data are invalid and/or lacking, DHEC should use the best available data/models to establish the chronological period during the year when the 0.1 Rule will be applied.

Alternatively, DHEC should resolve the ambiguity identified by the Court of Appeals by: (1) clarifying that the 0.1 rule does not apply during the long-standing winter period (unless the data indicate otherwise) and (2) clarify that the Department has discretion to apply alternate Wasteload Allocations during periods such as the "shoulder months" when the Department determines that a water body is not naturally impaired for

dissolved oxygen providing such alternate WLAs are protective of applicable water quality standards.

II. Secondary Issues

E. Review of Bacteriological Indicator for Assessing Ambient Waters.

The WQA supports a move away from using a single sample value to assess whether recreational waters are meeting recreational standards. EPA and most other State NPDES agencies do not use single sample results to assess recreational fitness. While single sample numbers may be appropriate as a screening/advisory tool in the context of bathing beach management, the geometric mean is really the appropriate measure for assessing recreational suitability.

Thus, DHEC should clarify in the standards that where more than one sample is available in a given month for the water in question, the geometric mean applies whereas the single sample value/daily maximum will apply during any month where only one sample is taken. This approach is fully consistent with EPA's implementation guidance for the enterococcus criteria and will avoid impaired waters decisions based only on one sample – which was never intended by EPA when it developed the single sample values for use by Beach managers.

F. Critical Conditions for Discharge Permitting.

We believe the Department should clarify the flexibility to use flow-based and other permitting strategies that better reflect actual discharge conditions rather than assumed worst-case scenarios that never occur.

For example, for Whole Effluent Toxicity testing in tidal situations, often DHEC will impose an instream waste concentration of 100% because a tidal creek may be dry for a few hours during the day. The problem is that while no dilution may occur for a few hours, there is undisputably dilution for the vast majority of any 48 hour period due to the tidal cycles. Thus, it makes no sense to run a 48-hour WET test using zero dilution. This circumstance – zero dilution over 48 hours – is an impossibility. Accordingly, the standards should expressly authorize the use of alternative critical flows.

We are encouraged with the Department's response that DHEC "already is using the flexibility in the standards to utilize flows other than 7Q10 on a case-by-case basis" but we are simply not aware of such cases. We will appreciate your sharing with us the examples where alternate flows were used in current NPDES permits so we can evaluate whether the Department's flexibility should be made clearer in the regulation.

G. Anitdegradation

We think the Department should establish a "safe harbor" for expansions of public facilities that have (1) gone through Council of Governments review and approval and (2) would not increase pollutants by more than 25 percent of the remaining assimilative capacity of the stream in question.

This approach is used by a number of states and does implement the antidegradation rules (with full EPA approval) because the 25% provision effectively defines no/deminimis degradation. Once a public project goes through the COG process, there is no reason to bother with an antidegradation review to the extent such discharge will only affect 25 percent of the available assimilative capacity for pollutants of concern. That leaves 75 percent of the assimilative capacity remaining and the water in full compliance with all water quality standards.

H. Incorporation of US EPA Criteria

We recommend that Section E.14 be revised. It currently provides:

"The numeric criteria developed and published by EPA are hereby incorporated into this regulation."

It should be changed to be consistent with Section 14(5) which specifies that: "The Department shall review new or revised EPA criteria for adoption by South Carolina when published in final form." The Department has indicated that it is reviewing this language and that this language was intended to "indicate that the entire published criterion is adopted into the standards, not just the numeric criterion." We appreciate the clarification but, unfortunately, do not understand what the Department's intent is. What other part of the criterion is being adopted other than the actual numeric values?

I. Waterbody Classifications

South Carolina is one of the few states that has not performed many waterbody use attainability analyses to address the many waters that naturally do not meet their assigned water quality standards. This is the case for most swamps around the State. We urge the Department to implement a use attainability process that will be used in advance of 303(d) listings and, especially, TMDL development so we don't end up with a repeat of the Savannah River situation.

J. Whole Effluent Toxicity Testing Methods

E.14.c(10) provides currently that any alternate WET testing species or methodology "shall be approved by the EPA". We recommend that you change this to "shall be proposed in an NPDES permit." This is consistent with how all other alternate methods are approved for use in permits. Moreover, this approach will allow public participation and EPA to object. This is a better approach than requiring EPA approval when EPA is not required to provide its approval and/or simply may not act otherwise. Same comment for the top of 22.

If the Department decides to approve for use an alternate copper testing method in an NPDES Permit, we understand that to be an acceptable approach so why the exception for WET methods?

We do not understand the Department's initial response that "the NPDES permitting process also addresses this issue."

K. Outstanding National Resource Waters

The ONRW Section specifies that no new or increased sources of pollution are allowed. We think this should be refined to require no measurable change in water quality instead of the current "none allowed." We think our suggested language is more in line with reality when one considers things like storm water discharges. This language will also ensure that we do not prevent a new discharge that will achieve a NET IMPROVEMENT to an ONRW stream as compared to current discharges. The current language could be misinterpreted to prevent a new facility from consolidating three existing facilities in an ONRW watershed with the result of 50 percent lower pollution loadings just because the new facility would be a "new" discharger.

We disagree with the Department's response that "ONRW waters are our most protected waters and degradation of any existing water quality is not allowed." We believe that EPA has made clear that short-term impacts during construction are permissible. Moreover, our point is that the current language precludes any new or expanded discharge even if there were no measurable change in water quality.

Thus, where an upgraded and expanded discharge is proposed that would actually improve the quality of the effluent/discharge, that might not be allowed under the current language of the rule. This would make no sense and we think the rule should be revised to prohibit any measurable reduction (again excepting short-term impacts consistent with EPA guidance) in water quality.

L. **Source Water Protection.**

We do not oppose the Department's proposal to remove the prohibition on mixing zones in source water protection areas. However, we believe the Department should acknowledge that mixing zones will be developed for upstream dischargers in consultation with downstream water utilities. DHEC should not make such decisions unilaterally. Instead, downstream water utilities should be consulted.

M. **Reclassification of the Upper Ashley River.**

The WQA supports the request to reclassify the upper Ashley River from SA to SB. This is one of the most studied river systems in the State thanks to the Town of Summerville. There is abundant data to support this change. We urge DHEC to make this modest adjustment – which will still be too stringent for what the water can naturally achieve. However, this would be a step in the right direction in terms of a more accurate and appropriate classification.

####